



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov

OPERATOR CERTIFICATION PROGRAM

FREQUENTLY ASKED QUESTIONS ABOUT THE OPERATOR CERTIFICATION PROGRAM AND CAREER PATHS IN THE WATER / WASTEWATER INDUSTRY

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This document is designed to describe the nature of working in the fields of water and wastewater treatment and to answer questions about the operator certification program. If read carefully, in conjunction with the rule for *Classification of Treatment Plants and Certification of Operators*, you will find the answers to most questions about this program. If you have additional questions that cannot be found in this document, please contact:

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATOR CERTIFICATION PROGRAM
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The rule for *Classification of Treatment Plants and Certification of Operators* is a matter of public record and may be found in Title 18, Chapter 5, Article 1 of the Arizona Administrative Code at:
http://www.azsos.gov/public_services/Title_18/18-05.htm

A hard copy of this rule may be purchased by directly contacting the office of the Secretary of State.

From the Occupational Outlook Handbook distributed by the:
U.S. Department of Labor, Bureau of Labor Statistics

Water and Liquid Waste Treatment Plant and System Operators

Significant Points

- Employment is concentrated in local government and private water supply and sanitary services companies.
- Postsecondary training is increasingly an asset as the number of regulated contaminants grows and treatment plants become more complex.
- Operators must pass exams certifying that they are capable of overseeing various treatment processes.

Nature of the Work

Clean water is essential for everyday life. *Water treatment plant and system operators* treat water so that it is safe to drink. *Liquid waste treatment plant and system operators*, also known as wastewater treatment plant and system operators, remove harmful pollutants from domestic and industrial liquid waste so that it is safe to return to the environment.

Water is pumped from wells, rivers, and streams to water treatment plants, where it is treated and distributed to customers. Liquid waste travels through customers' sewer pipes to liquid waste treatment plants, where it is treated and returned to streams, rivers, and oceans, or reused for irrigation and landscaping. Operators in both types of plants control processes and equipment to remove or destroy harmful materials, chemical compounds, and microorganisms from the water. They also control pumps, valves, and other processing equipment to move the water or liquid waste through the various treatment processes, and dispose of the removed waste materials.

Operators read, interpret, and adjust meters and gauges to make sure plant equipment and processes are working properly. They operate chemical-feeding devices, take samples of the water or liquid waste, perform chemical and biological laboratory analyses, and adjust the amount of chemicals, such as chlorine, in the water. They use a variety of instruments to sample and measure water quality, and common hand and power tools to make repairs. Operators also make minor repairs to valves, pumps, and other equipment.

Water and liquid waste treatment plant and system operators increasingly rely on computers to help monitor equipment, store sampling results, make process-control decisions, schedule and record maintenance activities, and produce reports. When problems occur, operators may use their computers to determine the cause of the malfunction and its solution.

Occasionally operators must work under emergency conditions. A heavy rainstorm, for example, may cause large amounts of liquid waste to flow into sewers, exceeding a plant's treatment capacity. Emergencies also can be caused by conditions inside a plant, such as chlorine gas leaks or oxygen deficiencies. To handle these conditions, operators are trained to make an emergency management response and use special safety equipment and procedures to protect public health and the facility. During these periods, operators may work under extreme pressure to correct problems as quickly as possible. These periods may create dangerous working conditions, and operators must be extremely cautious.

The specific duties of plant operators depend on the type and size of plant. In smaller plants, one operator may control all machinery, perform tests, keep records, handle complaints, and do repairs and maintenance. A few operators may handle both a water treatment and a liquid waste treatment plant. In larger plants with many employees, operators may be more specialized and only monitor one process. The staff also may include chemists, engineers, laboratory technicians, mechanics, helpers, supervisors, and a superintendent.

Water pollution standards have become increasingly stringent since adoption of two major Federal environmental statutes: the Clean Water Act of 1972, which implemented a national system of regulation on the discharge of pollutants; and the Safe Drinking Water Act of 1974, which established standards for drinking water. Industrial facilities sending their wastes to municipal treatment plants must meet certain minimum standards to ensure that the wastes have been adequately pretreated and will not damage municipal treatment facilities. Municipal water treatment plants also must meet stringent drinking water standards. The list of contaminants regulated by these statutes has grown over time. For example, the 1996 Safe Drinking Water Act Amendments include standards for the monitoring of cryptosporidium and giardia, two biological organisms that cause health problems. Operators must be familiar with the guidelines established by Federal regulations and how they affect their plant. In addition to Federal regulations, operators also must be aware of any guidelines imposed by the State or locality in which the plant operates.

Working Conditions

Water and liquid waste treatment plant and system operators work both indoors and outdoors, and may be exposed to noise from machinery and unpleasant odors. Operators' work is physically demanding and often is performed in unclean locations. They must pay close attention to safety procedures for they may be confronted with hazardous conditions, such as slippery walkways, dangerous gases, and malfunctioning equipment. Plants operate 24 hours a day, 7 days a week; therefore, operators work one of three 8-hour shifts, including weekends and holidays, on a rotational basis. Operators may be required to work overtime.

Employment

Water and liquid waste treatment plant and system operators held about 88,000 jobs in 2000. Most worked for local governments. Some worked for private water supply and sanitary services companies, which increasingly provide operation and management services to local governments on a contract basis. Water and liquid waste treatment plant and system operators are employed throughout the country, but most jobs are in larger towns and cities. Although nearly all work full time, those who work in small towns may only work part time at the treatment plant—the remainder of their time may be spent handling other municipal duties.

Training, Other Qualifications, and Advancement

A high school diploma usually is required to become a water or liquid waste treatment plant operator. Operators need mechanical aptitude and should be competent in basic mathematics, chemistry, and biology. They must have the ability to apply data to formulas of treatment requirements, flow levels, and concentration levels. Some basic familiarity with computers also is necessary because of the trend toward computer-controlled equipment and more sophisticated instrumentation. Certain positions—particularly in larger cities and towns—are covered by civil service regulations. Applicants for these positions may be required to pass a written examination testing mathematics skills, mechanical aptitude, and general intelligence.

Completion of an associate degree or 1-year certificate program in water quality and liquid waste treatment technology increases an applicant's chances for employment and promotion because plants are becoming more complex. Offered throughout the country, these programs provide a good general knowledge of water and liquid waste treatment processes, as well as basic preparation for becoming an operator.

Trainees usually start as attendants or operators-in-training and learn their skills on the job under the direction of an experienced operator. They learn by observing and doing routine tasks such as recording meter readings; taking samples of liquid waste and sludge; and performing simple maintenance and repair work on pumps, electric motors, valves, and other plant equipment. Larger treatment plants generally combine this on-the-job training with formal classroom or self-paced study programs.

The Safe Drinking Water Act Amendments of 1996, enforced by the U.S. Environmental Protection Agency, specify national minimum standards for certification and recertification of operators of community and nontransient, noncommunity water systems. As a result, operators must pass an examination to certify that they are capable of overseeing liquid waste treatment plant operations. There are different levels of certification depending on the operator's experience and training. Higher certification levels qualify the operator for a wider variety of treatment processes. Certification requirements vary by State and by size of treatment plants. Although relocation may mean having to become certified in a new location, many States accept other States' certifications.

Most State drinking water and water pollution control agencies offer training courses to improve operators' skills and knowledge. These courses cover principles of treatment processes and process control, laboratory procedures, maintenance, management skills, collection systems, safety, chlorination, sedimentation, biological treatment, sludge treatment and disposal, and flow measurements. Some operators take correspondence courses on subjects related to water and liquid waste treatment, and some employers pay part of the tuition for related college courses in science or engineering.

As operators are promoted, they become responsible for more complex treatment processes. Some operators are promoted to plant supervisor or superintendent; others advance by transferring to a larger facility. Postsecondary training in water and liquid waste treatment, coupled with increasingly responsible experience as an operator, may be sufficient to qualify for superintendent of a small plant, where a superintendent also serves as an operator. However, educational requirements are rising as larger, more complex treatment plants are built to meet new drinking water and water pollution control standards. With each promotion, the operator must have greater knowledge of Federal, State, and local regulations. Superintendents of large plants generally need an engineering or science degree.

A few operators get jobs with State drinking water or water pollution control agencies as technicians, who monitor and provide technical assistance to plants throughout the State. Vocational-technical school or community college training generally is preferred for technician jobs. Experienced operators may transfer to related jobs with industrial liquid waste treatment plants, water or liquid waste treatment equipment and chemical companies, engineering consulting firms, or vocational-technical schools.

Job Outlook

Employment of water and liquid waste treatment plant and system operators is expected to grow as fast as the average for all occupations through the year 2010. Because the number of applicants in this field is normally low, job prospects will be good for qualified applicants.

The increasing population and growth of the economy are expected to boost demand for essential water and liquid waste treatment services. As new plants are constructed to meet this demand, employment of

water and liquid waste treatment plant and system operators will increase. In addition, many job openings will occur as experienced operators transfer to other occupations or leave the labor force.

Local governments are the largest employers of water and liquid waste treatment plant and system operators. However, Federal certification requirements have increased reliance on private firms specializing in the operation and management of water and liquid waste treatment facilities. As a result, employment in privately owned facilities will grow faster than the average. Increased pretreatment activity by manufacturing firms also will create new job opportunities.

Earnings

Median annual earnings of water and wastewater treatment plant and system operators were \$34,960 in May 2004. The middle 50 percent earned between \$27,180 and \$43,720. The lowest 10 percent earned less than \$21,700, and the highest 10 percent earned more than \$53,540. Median annual earnings of water and liquid waste treatment plant and systems operators in May 2004 were \$34,990 in local government and \$32,350 in water, sewage, and other systems.

In addition to their annual salaries, water and wastewater treatment plant and system operators usually receive benefits that may include health and life insurance, a retirement plan, and educational reimbursement for job-related courses.

Related Occupations

Other workers whose main activity consists of operating a system of machinery to process or produce materials include chemical plant and system operators; gas plant operators; petroleum pump system operators, refinery operators, and gaugers; power plant operators, distributors, and dispatchers; and stationary engineers and boiler operators.

Sources of Additional Information

For information on employment opportunities, contact State or local water pollution control agencies, State water and liquid waste operator associations, State environmental training centers, or local offices of the State employment service.

For information on certification, contact:

Association of Boards of Certification
208 Fifth St.
Ames, IA 50010-6259.
Internet: <http://www.abccert.org>

For information on Occupational Outlook Handbook

Internet: <http://stats.bls.gov/oco/#content>

For educational information related to a career as a water or liquid waste treatment plant and system operator, contact:

American Water Works Association
6666 West Quincy Ave.
Denver, CO 80235

Water Environment Federation
601 Wythe St.
Alexandria, VA 22314-1994
Internet: <http://www.wef.org>

ARIZONA OPERATOR CERTIFICATION PROGRAM FREQUENTLY ASKED QUESTIONS

1. *What must I do to become a certified operator?*

An applicant must comply with the education and experience requirements for the certification classification and grade for which application is made and achieve a passing score on the certification examination.

2. *Can I still become a certified operator if I didn't finish high school?*

An applicant must have at least a high school graduation or the equivalent pursuant to R18-5-112.D(1) of the Arizona Administrative Code (A.A.C.).

3. *I passed a GED test. Does this satisfy the high school requirement?*

The rule refers to “high school graduation or the equivalent”. High school equivalency is accepted as being equal to a high school diploma.

4. *If I have a bachelor's degree in a technical discipline, do I still have to pass an examination and meet the experience requirements?*

Each applicant must pass an examination and meet minimum experience requirements to become a certified operator. However, an applicant may be eligible to take a higher grade examination depending on the amount of post secondary education that an applicant has completed.

5. *Do I have to attend a class to become a certified operator?*

You do NOT have to attend a mandatory class to become a certified operator. However, a class or refresher course may be very helpful.

6. *How do I apply for an examination?*

The Department has approved several contractors to proctor operator examinations. You may contact a contractor directly for an application to take an examination. A list of approved examiners is available upon request and is also posted on the ADEQ Web site at: <http://www.azdeq.gov/enviro/water/dw/opcert.html> Please contact the contractor directly for exam dates, times and price. An operator is responsible for any fees associated with taking an examination.

7. *Is there a fee for certification?*

There is no fee for a certificate. This includes a new or renewed certificate or a certificate gained through reciprocity.

8. *Will an approved contractor provide training or other services in addition to an examination?*

It is up to an individual contractor whether a training class, a workshop, or a review is provided in addition to an examination. A fee may be charged for these services at the discretion of the contractor.

9. *Do I have to notify the Department before taking an examination?*

You may directly contact the contractor of your choice and fill out an application for examination. The contractor and/or ADEQ will determine if you are qualified to take an examination. After passing an examination, the contractor is required to notify the Department with the results within seven (7) days. The Department then issues the certificate by inputting the data into the operator certification database. The actual certificate is printed at the beginning of each week and mailed to the address on the certificate.

10. *What type of examination is required to become a certified operator?*

Examinations range from 100 to 200 questions in length. Questions pertain to operating a water treatment plant, distribution system, wastewater treatment plant, or collection system, and regulatory questions from the appropriate sections of the Arizona Administrative Code. An applicant is required to score a minimum of 70% correct on an examination in order to attain a passing grade.

For all grades of water treatment plant operator or distribution system operator examinations, regulatory questions will be taken from the *Safe Drinking Water*, Title 18, Chapter 4 and *Classification of Treatment Plants and Certification of Operators*, Title 18, Chapter 5, Article 1.

For all grades of wastewater treatment plant operator or collection system operator examinations, regulatory questions will be taken from *Unified Water Quality Permit Rules*, Title 18, Chapter 9, Article 1- 7 and *Classification of Treatment Plants and Certification of Operators*, Title 18, Chapter 5, Article 1.

11. *What is a PDH?*

PDH means professional development hour.

12. *What is a Professional Development Hour?*

A professional development hour is equal to one contact hour of continuing education. A total of 30 professional development hours are required for each 3-year renewal period regardless of the number of certificates that are held by an individual operator. Ten of the thirty PDHs must be directly related to an operator's job.

The legal definition contained in the Arizona Administrative Code defines a professional development hour as follows:

"Professional development hour" means one hour of participation in an organized educational activity related to engineering, biological or chemical sciences, a closely related technical or scientific discipline, or operations management.

13. *How do I renew my certificate?*

To renew a certificate an operator is required to submit a list indicating the date, type of training, and number of PDHs on a PDH tracking and renewal form approved by the Department. The form must be signed by a supervisor, or a peer if the operator is self-employed, verifying that the information on the form is accurate. Mail or fax the form to the Arizona Department of Environmental Quality Operator Certification Program.

Training certificates or other documents SHOULD NOT be attached to the form unless requested by the Department. The Department randomly audits a percentage of renewals and may ask an operator to provide the applicable documentation. Keep your documentation in case you are asked by the Department for verification.

To obtain a copy of the renewal form go to the ADEQ web site at:

<http://www.azdeq.gov/enviro/water/dw/opcert.html>

14. *What type of PDHs are acceptable to the Department for certificate renewal?*

The type of PDH acceptable to the Department for certificate renewal include, but are not limited to: an approved college course, a course offered by a Certified Environmental Trainer, regulatory and tribal agency training, certain types of in-house training, technical conferences, correspondence courses, and manufacturer product training. An accredited college course is usually recorded in credit hours. In general, 1 college credit hour = 10 PDHs. If an operator has a question about a specific type of training, please call the Operator Certification Coordinator for approval before attending the training.

15. *Do I have to take continuing education to maintain my certificate?*

NO, in lieu of continuing education, an operator may take a written examination for the same class and grade or, if eligible, the next higher grade.

16. *Will the Department notify me before my certificate expires?*

NO, since the rule requiring a fee for certification was repealed, an operator will no longer receive an invoice by ADEQ's accounts receivable staff. It is the responsibility of the operator to maintain the requirements associated with certification. This includes notifying the Department of a change of address as well as renewing a certificate on time. If an operator is unsure when a specific certificate expires, the Department will furnish the operator with this information. In addition, the Department has a current database with each **active** operator's information available on the ADEQ website.

<http://www.azdeq.gov/databases/opcertsearch.html>

17. *If my certificate expires, do I have to retake a written examination?*

Within 90 days after a certificate expires, an operator may be reinstated by meeting all renewal requirements. After 90 days, an operator **MUST** take a written examination for the same class and grade to remain a certified operator. An operator may also take an exam for the next higher grade if eligible.

18. All of my certificates expire on different dates.

The rule allows an operator to request, in writing, a common expiration date (month and year), up to 3 years, for each certificate renewed. The Department recommends that each operator take advantage of this option for easier record keeping of certificate expiration dates and PDHs earned toward certificate renewal. We are accepting requests through regular mail, e-mail or fax. Phone requests will not be honored.

19. Can I receive a grandparented certificate under this rule?

The rule does not allow for any grandparenting of certificates. All certificates must be earned by testing or through reciprocity with another recognized jurisdiction. All current grandparented certificates are valid. If a grandparented certificate has expired for more than 90 days, the operator is required to take a written examination under the experience and education requirements of the rule.

20. How can I communicate effectively with ADEQ staff??

All operators are required to notify the Department, in writing, of any changes in employment within 10 days. Operators should also notify the Department of any changes in their personal contact information. Whenever an operator corresponds with the Department in any format, please include the following information (if applicable):

- operator ID # and name
- current mailing address
- day time phone number
- e-mail address
- certificate type, grade, expiration date

CLASSIFICATION DEFINITIONS

WATER TREATMENT PLANT OPERATOR (T) – Possess a working knowledge of the Safe Drinking Water Act and Title 18, Chapters 4 and 5 of the Arizona Administrative Code (http://www.azsos.gov/public_services/Table_of_Contents.htm) and OSHA safety requirements. Monitor raw water entering the plant and passing through each treatment process. Maintain and repair equipment and facilities as necessary. Perform periodic operating checks of plant equipment such as pumping systems, chemical feeders, auxiliary equipment and measuring and control systems. Perform routine maintenance such as lubrication, operational adjustments, cleaning, and painting equipment. Load and unload chemicals, such as chlorine cylinders, bulk liquids, powered chemicals, and other water treatment chemicals using appropriate chemical-handling procedures. Perform minor corrective maintenance on plant equipment. Maintain plant records. Monitor the status of plant operating guidelines such as chemical feeds and pressures. Collect samples and perform laboratory analysis on samples. Order chemicals, repair parts and tools. Estimate budgets. Conduct safety inspections. Make arithmetic calculations to determine chemical feed rates, flow quantities, and detention and contact times. Work with the general public under varying conditions.

WATER DISTRIBUTION SYSTEM OPERATOR (D) – Possess a working knowledge of the Safe Drinking Water Act and Title 18, Chapters 4 and 5 of the Arizona Administrative Code (http://www.azsos.gov/public_services/Table_of_Contents.htm), and OSHA safety requirements. Possess a working knowledge of traffic control regulations, Arizona Blue Stake law, and securing work sites to protect both the operator and the general public. Collect water samples. Excavate, install, connect, test, and disinfect, new water mains. Install and maintain meters, services and related connections. Repair, maintain, test, flush and clean existing water mains. Update water distribution “as built”. Adjust, repair, clean, overhaul, operate and maintain pumps, motors, controls, disinfection systems, regulating valves, storage tanks and reservoirs. Regulate system flows, pressures and exercise valves. Troubleshoot electrical and mechanical equipment. Keep records and prepare reports. Manage budgets. Conduct safety inspections.

WASTEWATER TREATMENT PLANT OPERATOR (W) – Possess a working knowledge of the Clean Water Act and Title 18, Chapters 5 and 9 of the Arizona Administrative Code (http://www.azsos.gov/public_services/Table_of_Contents.htm), and OSHA safety requirements. Operate sewage treatment, sludge processing, and disposal equipment in a wastewater treatment plant to control the flow and processing of sewage. Monitor control panels and adjust valves and gates manually or by remote control to regulate the flow of sewage. Observe variations in operating conditions and interpret meter and gauge readings and tests results to determine load requirements. Start and stop pumps, engines, and generators to control the flow of raw sewage through filtering, settling, aeration, and sludge digestion processes. Maintain log of operations and record meter and gauge readings. Give directions in performing routine operations and maintenance. Collect sewage samples, using dipper or bottle and conduct laboratory tests, using testing equipment, such as colorimeter. Operate and maintain power generating equipment to provide steam and electricity for plant.

WASTEWATER COLLECTION SYSTEM OPERATOR (C) – Possess a working knowledge of the Clean Water Act and Title 18, Chapters 5 and 9 of the Arizona Administrative Code (http://www.azsos.gov/public_services/Table_of_Contents.htm), and OSHA safety requirements. A wastewater collection system gathers the used water from our homes and businesses and conveys it to a wastewater treatment plant. The collection system includes the gravity sewers, force mains, manholes, pumping equipment and other facilities. Operates and inspects the system to keep the wastewater flowing. Inspect/install new service connections using closed-circuit television to inspect sewers. Clean sewers; remove stoppages in sewers, maintain equipment and repair lines, equipment and facilities.

Operator Certification Exam Reference Materials

These reference materials are not the only source of information. In preparing to take an exam you should use any materials that are available to you. Use of the internet is very helpful.

Arizona Administrative Code

Title 18, Chapter 4, Articles 1 -8

Title 18, Chapter 5, Article 1

Title 18, Chapter 9, Articles 1 – 7

These articles can found at the Secretary of Sate website at:

http://www.azsos.gov/public_services/Table_of_Contents.htm

ADEQ Operator Certification Exam Study Guides are available at no charge for all exams. To receive a copy of the study guide contact the Program Coordinator at 602.771.4644. Or you can download a copy from the ADEQ web site.

To obtain a copy of the Exam Study Guides go to the ADEQ web site at:

<http://www.azdeq.gov/envIRON/water/dw/opcert.html>

This list provides an example of some exam reference materials that can be used to prepare for an exam. Any other publications, training, workshops, conferences or web sites can be utilized. No one single source has been used to develop the current ADEQ operator certification exams.

Operator Certification Sacramento Manuals

OFFICE OF WATER PROGRAMS

California State University Sacramento

Phone 916-278-6142, Fax 916-278-5959

<http://www.owp.csus.edu/orderform.htm>

Water Distribution System Operation and Maintenance, 4th Ed.

Operation of Water Treatment Plants. Vol. 1,4th Ed.

Operation of Water Treatment Plants. Vol. 2, 4th Ed

Operation and Maintenance of Wastewater Collection Systems Vol. 1, 6 the. Ed

Operation and Maintenance of Wastewater Collection Systems Vol. 2, 5th Ed.

Operation of Wastewater Treatment Plants. Vol. 1,5th Ed.

Operation of Wastewater Treatment Plants. Vol. 2, 6th Ed.

Advanced Waste Treatment. 3rd Ed.

American Water Works Association

1.800.926.7337

<http://www.awwa.org/bookstore/ProductList.cfm>**Water Supply Operations I: Water Sources, Textbook, Third Edition**

Water operator training text teaches fundamentals of water sources for drinking water.

Edition: 2003, Hardback, 212 pp.

ISBN 1-58321-229-9; Catalog Number 1955.

Water Supply Operations II: Water Treatment, Textbook, Third Edition

Water operator training text teaches fundamentals of common water treatment processes and techniques.

Edition: 2003, Hardback, 552 pp.

ISBN 1-58321-230-2; Catalog Number 1956.

Water Supply Operations III: Water Transmission and Distribution, Third Edition, Textbook

Basic principles of design, construction, operation, and maintenance of water transmission and distribution systems.

Edition: 2003, Hardback, 553 pp.

ISBN 1-58321-231-0; Catalog Number 1957.

Water Supply Operations IV: Water Quality, Textbook, Third Edition

Water operator training text teaches fundamentals of water quality analysis and drinking water regulations.

Edition: 2003, Hardback, 214 pp.

ISBN -58321-232-9; Catalog Number 1958.

Water Supply Operations V: Basic Science Concepts and Applications, Third Edition

Water operator training text teaches fundamental mathematics, hydraulics, chemistry, and electricity as they apply to municipal water supply.

Edition: 2003, Hardback, 645 pp.

ISBN 1-58321-233-7; Catalog Number 1959.

WEB LINKS

USE THESE AS A EXAM REFERENCE SOURCE

www.owp.csus.edu

www.owp.csus.edu/glossary/glossary.htm

www.webelements.com

www.chemicaland21.com/arokorhi/industrialchem/icmenu01.htm#ICIC

<http://www.niehs.nih.gov/odhsb/manual/man11h.htm>

<http://www.afscme.org/health/faq-lock.htm>

<http://www.tamug.edu/safety/Lockout.htm>

http://www.osha.gov/dts/osta/otm/otm_v/otm_v_2.html#2

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10931

<http://www.afscme.org/health/faq-trch.pdf>

http://www.dir.ca.gov/dosh/dosh_publications/tb_trench.pdf

<http://www.cdc.gov/elcosh/docs/d0300/d000379/d000379.pdf>

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9797

<http://www.pp.okstate.edu/ehs/links/conspace.htm>

<http://www.rescuenet.com/rn/vault/gloss.html>

<http://www.utexas.edu/safety/ehs/train/cse/2.html>

<http://web.princeton.edu/sites/ehs/labsafetymanual/cheminfo/chlorine.htm>

List of Approved Vendors for Operator Certification Examinations

The following vendors have been approved by the Arizona Department of Environmental Quality to provide operator certification examination services. Contact the vendors directly for the classification and grade each vendor is approved for as well as the dates, times, locations, and prices for each examination.

Technical Learning College P.O Box 420 Payson, Arizona 85547 Melissa Durbin Phone: 1-866-557-1746 Fax: (928) 468-0675	EnviroEd Julie Dwyer 603 Valle Escondido Cornville, AZ 86325 (602)828-0721
Gateway Community College 108 N. 40th St. Phoenix, Arizona 85034 Lisa Young Phone: (602) 286-8160 Fax: (602) 286-8614	Mohave Community College 3400 Highway 95 Bullhead City, Arizona 86442 Cathy Stubblefield Phone: (928) 758-3926 Fax: (928) 704-9460
Arizona Western College 1351 S. Redondo Center Dr. Yuma, Arizona 85365 Carmen Madero Phone: (928) 317-6181 Fax: (928) 317-6183	Northland Pioneer College P. O. Box 610 Holbrook, Arizona 86025 Peggy Belknap Phone: (800) 266-7845 Fax: (928) 524-9055
Southern Arizona Institute of Advanced Training 3000 E. Valencia Road, Suite 190 Tucson, Arizona 85706 Connie Rosdahl Phone: (520) 573-7399 # 100 Fax: (520) 573-7644	Coconino Community College 2800 S. Lone Tree Road Flagstaff, Arizona 86001 Eva Jones Phone: (928) 226-4206 Fax: (928) 226-4103
Arizona Small Utilities Assoc. 210 N. Central Avenue Avondale Arizona 85323 Flavio Gonzalez Phone: (623) 882-1228 Fax: (623) 882-3998	Cochise Community College 901 N. Colombo Avenue Sierra Vista Arizona 85635-2317 Sharon Townsend Phone: (520) 515-5447 Fax: (520) 515-8752
Arizona Water & Pollution Control Association (AWPCA) 1042 Willow Creek Road, A101-510 Prescott, Arizona 86301 Debbie Muse / Jim Littrell Phone: (888) 559-8844 Fax: (928) 717-9910	Pima County / Wastewater Management Dept. 201 North Stone Avenue Tucson, Arizona 85701-1207 Albert Garcia Available to Pima County employees only
City of Kingman Public Works 3700 E. Andy Devine Avenue Kingman, Arizona. 86401 W.J. Corwin Available to city employees only	City of Scottsdale 9312 N. 94 th Street Scottsdale, Arizona. 85258 D.J. Kurth Available to city employees only